

# PRINTING INFORMATION

# D&T: GRAPHIC PRODUCTS

## PRINTING

The specification requires a knowledge of printing processes.

*Know about origination including grids, layout, imposition, proofing, colour separations and registration.*

*Know about methods used in monochrome and colour printing (a historical perspective is **not required**) to include letterpress, gravure, lithography and screenprinting.*

*Know about printing effects such as die cutting, spirit varnishing, UV varnishing, laminating, embossing.*

*Know about finishing and binding including cutting, folding and binding methods.*

# D&T: CYNHYRCHION GRAFFIG

## PRINTING

The printing process can be split up into:

**PREPRESS**

**ON PRESS**

**FINISHING**

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**PREPRESS** *Know about origination including grids, layout, **imposition**, proofing, **colour separations** and **registration**.*

**IMPOSITION:** this is the planning of the *PAGINATION* of a publication so that when printed, folded and cropped the pages are in the correct order.

Most designers work out the pagination by working on sketched double page flat plans.

Most printers work with sheets that contain 16 pages, 8 on each size, and the first right page is always 1 and the first left hand page is 2.

The front of the printed sheet will contain pages – 1, 4, 5, 8, 9, 12, 13, 16.  
The back of the printed sheet will contain pages – 2, 3, 6, 7, 10, 11, 14, 15.

The best way to work this out is to make a folded mock up and then to transfer this to a dimensioned **FLAT PLAN**

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## IMPOSITION

The first edge of the paper to pass into the press is the GRIPPER EDGE.

The paper has to be turned over to print the back of the sheet. A way of doing this is WORK AND TURN.

This is what you do for duplex printing with most inkjet printers – it is turned over with the same *Gripper Edge*.

FRONT

9	12	6	8
4	13	16	1

GRIPPER EDGE

BACK

2	01	11	9
2	15	14	3

GRIPPER EDGE

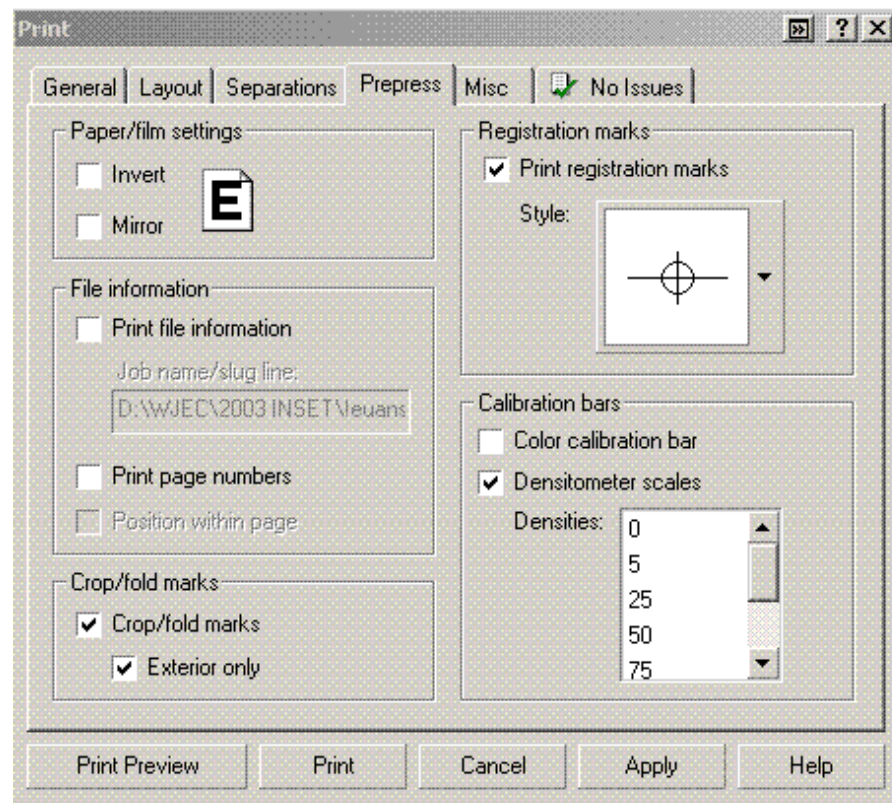
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## REGISTRATION

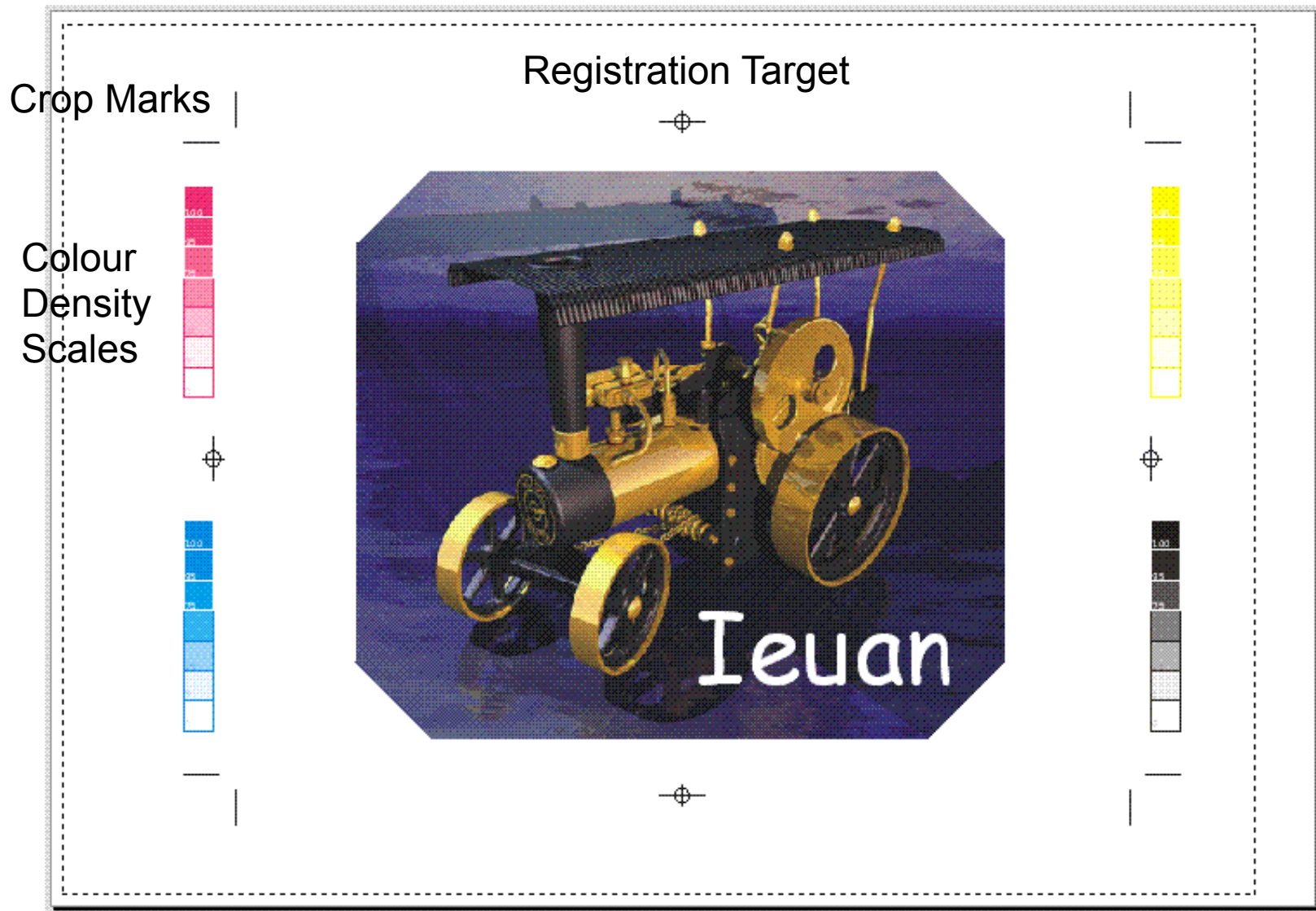
These are the marks that are printed on the pages to ensure that the colours are in the right places and have the correct density.

Crop marks are also put on for cutting the pages to the right size.

The illustration to the right is part of the print dialogue box in CorelDraw, but all professional packages have this facility.



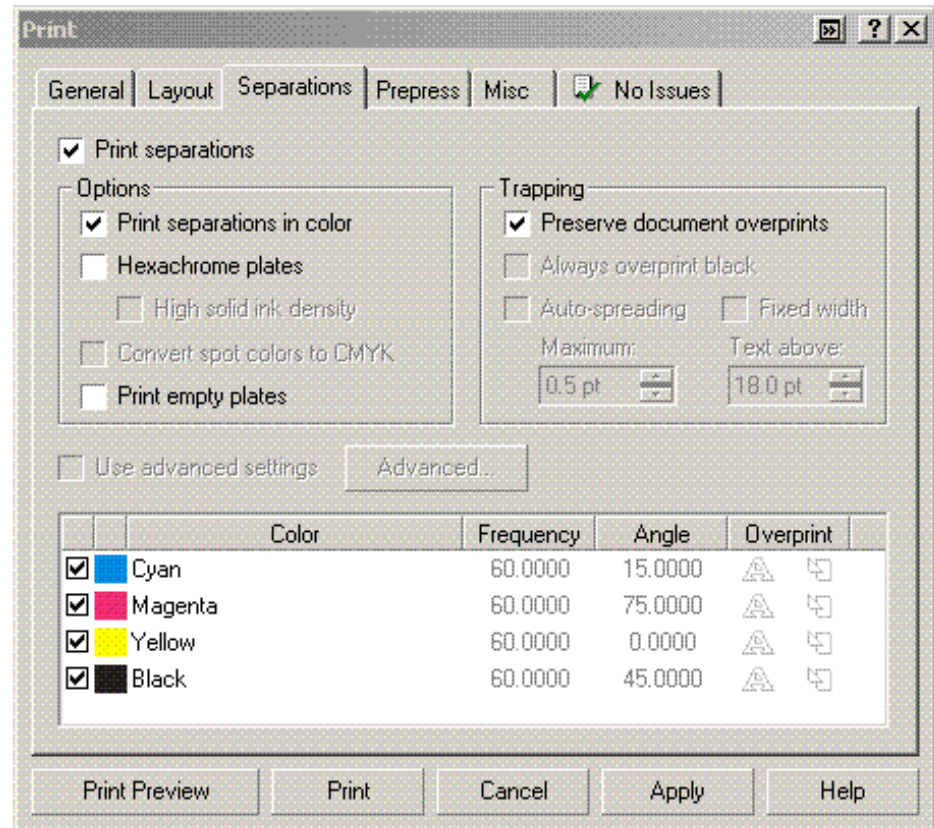
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**COLOUR SEPARATION** : This is the way that the document gets split up into the four colours that are used for printing. The separation images can be printed using the colour of the separation or in black.

The illustration to the right is part of the print dialogue box in CorelDraw, but all professional packages have this facility.

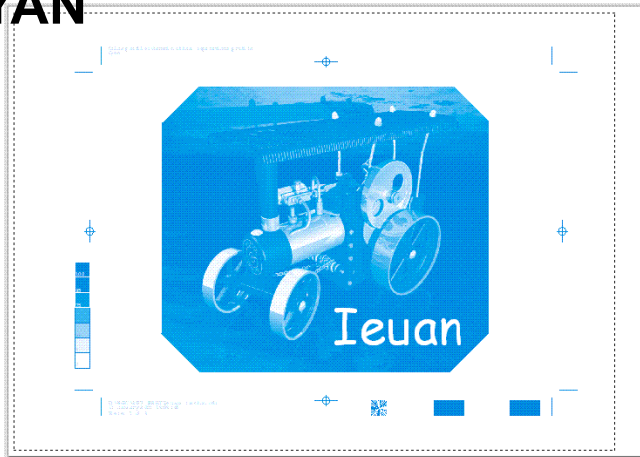




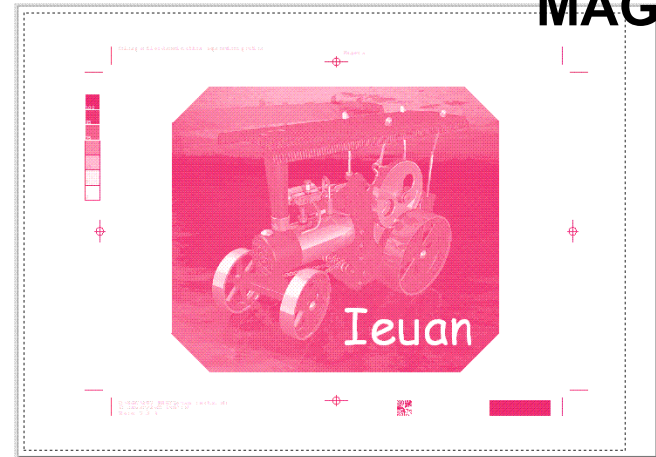
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## COLOUR PRINTED SEPARATIONS

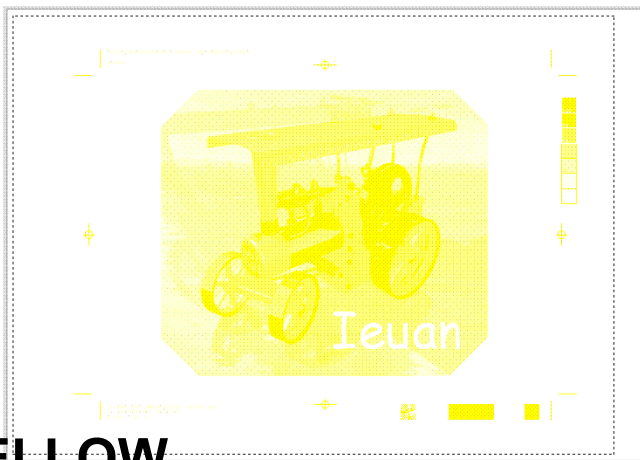
**CYAN**



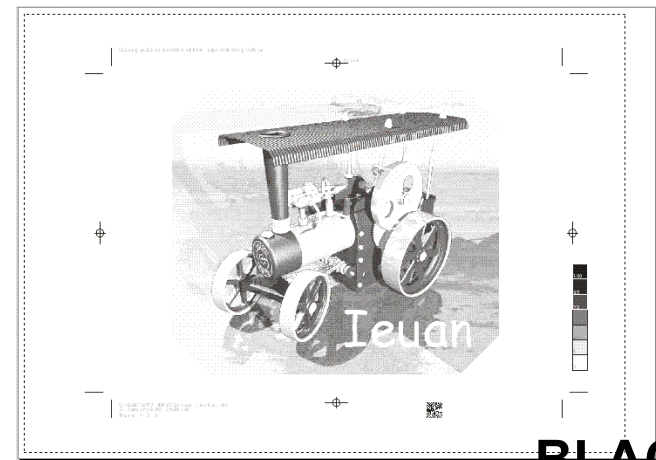
**MAGENTA**



**YELLOW**



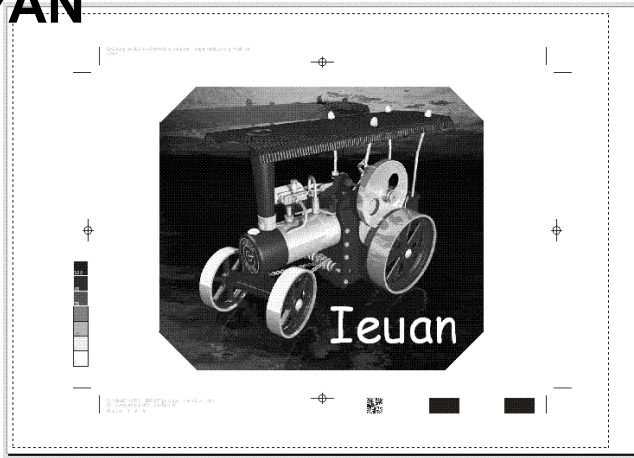
**BLACK**



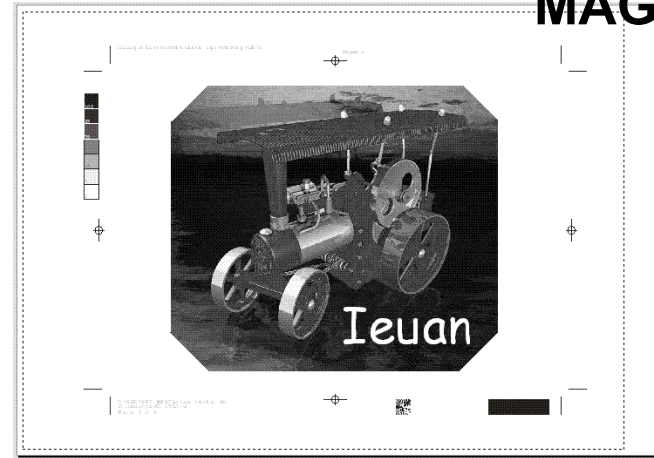
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## BLACK PRINTED SEPARATIONS

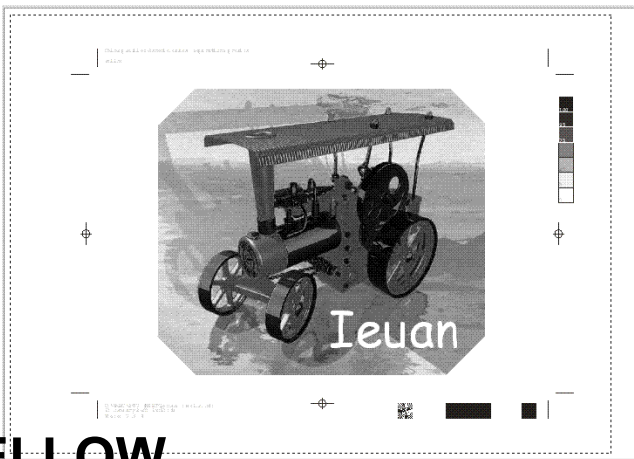
**CYAN**



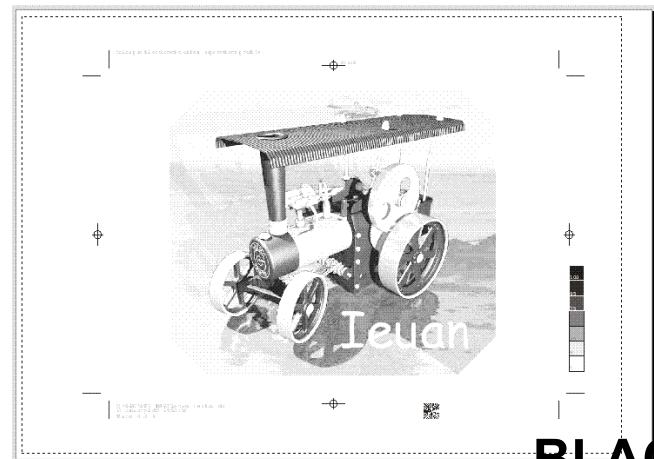
**MAGENTA**



**YELLOW**



**BLACK**



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## ON PRESS

*Know about methods used in monochrome and colour printing to include **letterpress**, **gravure**, **lithography** and **screenprinting**.*

There are four methods of printing.

RELIEF - letterpress, flexography

INTAGLIO - gravure

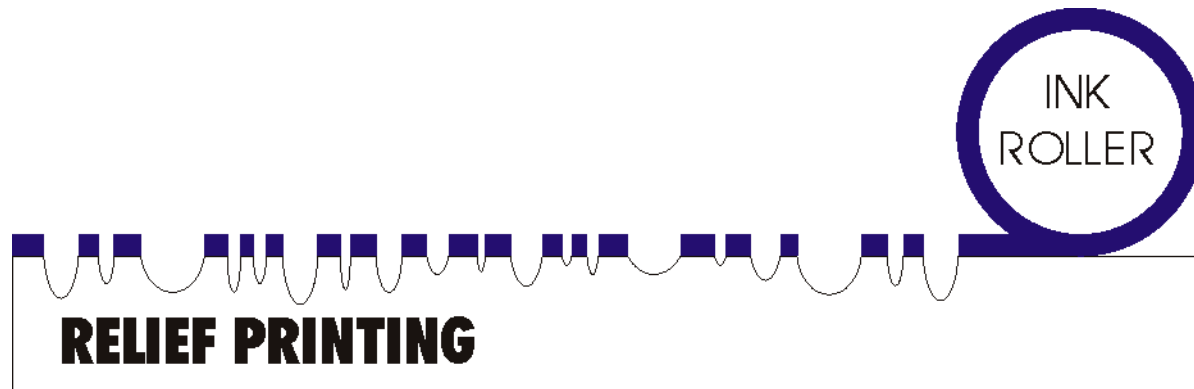
PLANOGRAPHIC - lithography

STENCIL - screenprinting

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## RELIEF

- letterpress, flexography



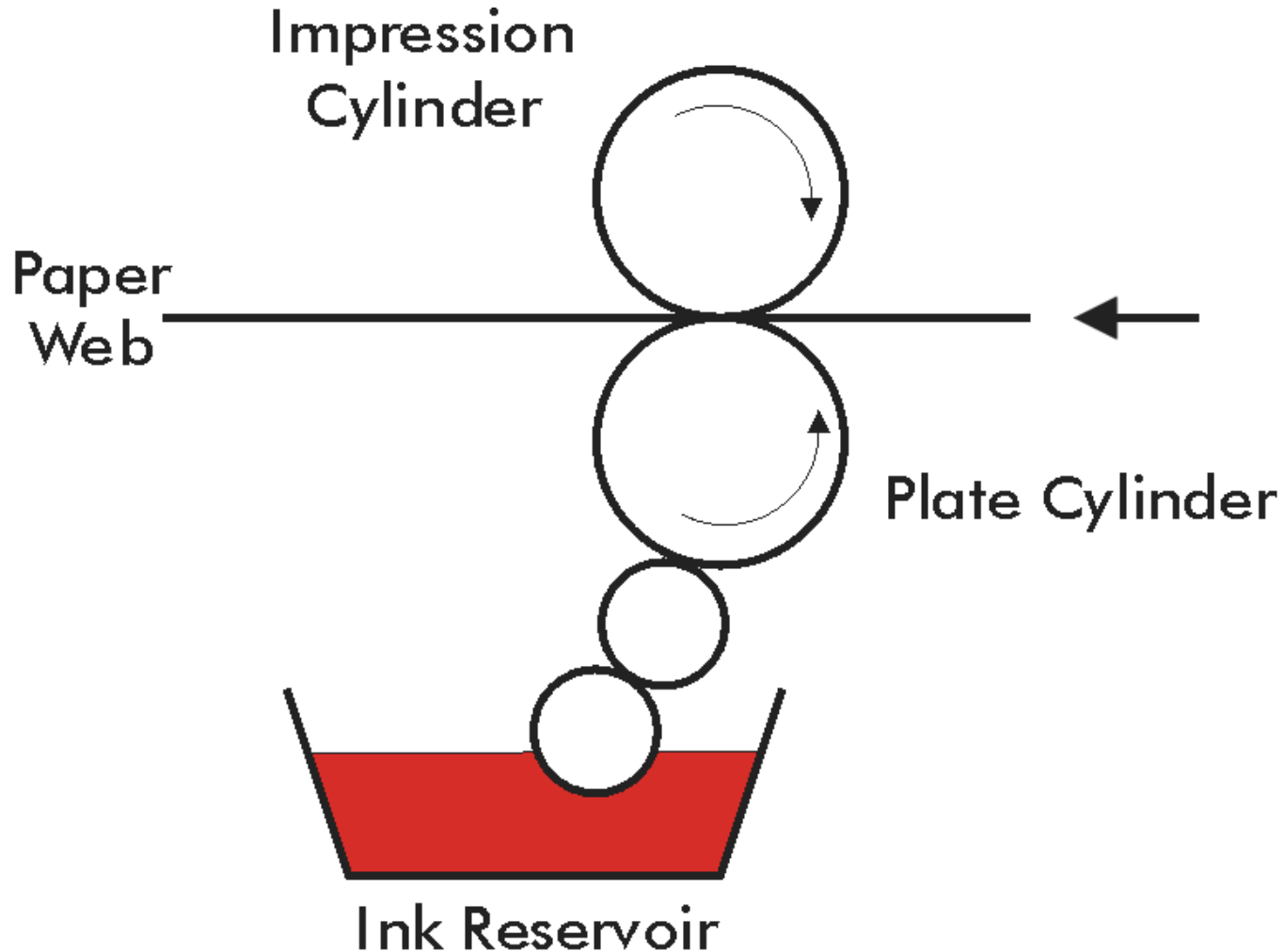
This process applies ink to the parts that stand proud of the plate.

The paper is then pressed against the inked parts.

The plate can be made of metal but more usually now is flexible rubber or photopolymer.

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## FLEXOGRAPHY



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Letterpress and Flexography are similar but Flexographic printing has replaced Letterpress in the commercial world.

## ADVANTAGES

- Prints well on cheap paper.
- Prints well on most plastics
- Cheap to make the plates
- Ink dries quickly
- Can use old letterpress machines.
- High speed

## DISADVANTAGES

- Poor halftone images.
- Plates distort in use.
- Difficult to print fine detail.
- Uses solvent based ink.
- Set up costs are high.
- Long print runs needed.

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Flexography is a popular process and is used to print:

Anything on cellophane, plastics & metal foils.

Plastic bags.

Paper bags.

Packaging including on corrugated paper.

Food packaging.

Cheap magazines.

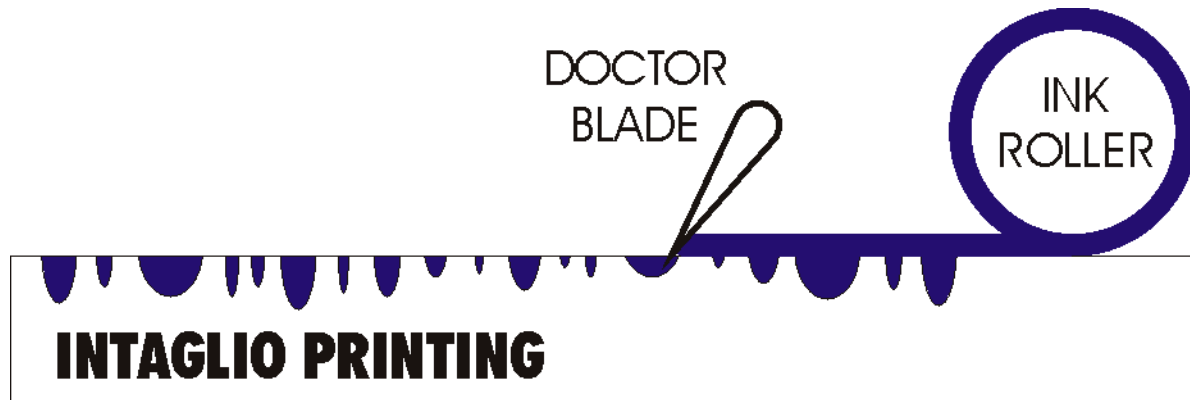
Newspapers.

Cheap paperback books

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## INTAGLIO

- gravure



This process fill holes in the printing plate with ink.

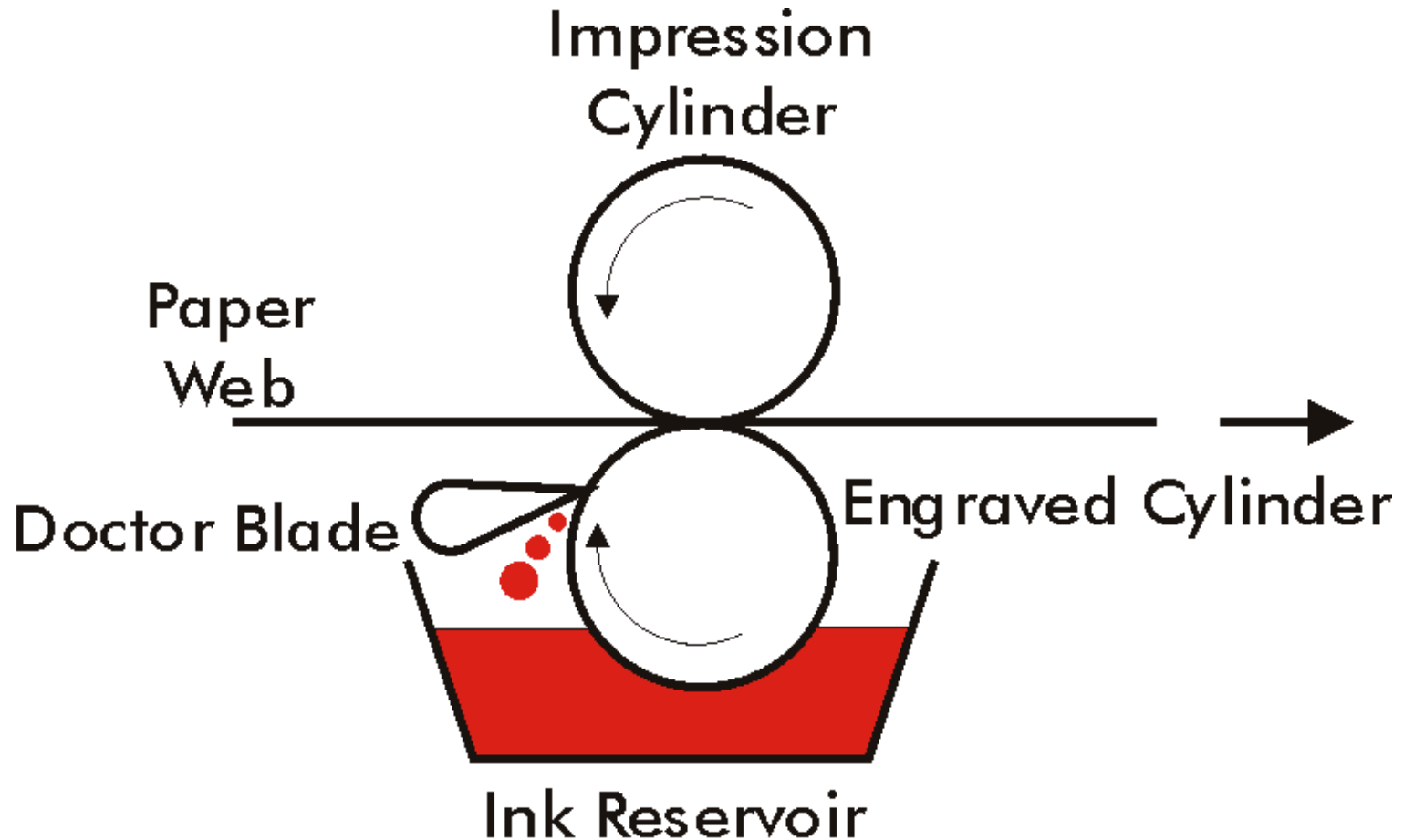
The paper is then pressed against the plate picking up the ink.

The plate is usually made of metal.



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## GRAVURE



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A rotary, web fed gravure press produces great output from screened photoset originals and does this consistently at high speed.

## ADVANTAGES

Prints well on cheap paper.

Simple process.

Consistant colour.

Prints fine detail.

High speed -50,000 per hour

## DISADVANTAGES

Expensive plates.

Corrections difficult & expensive

Uses solvent based ink.

Set up costs are high.

Long print runs needed – 300,000+

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Gravure is a popular process and is used to print:

- Fine art prints

- High quality art books

- High quality Photography books

- Postage stamps

- Wallpaper

- Decorative laminates

- Weekly Magazines

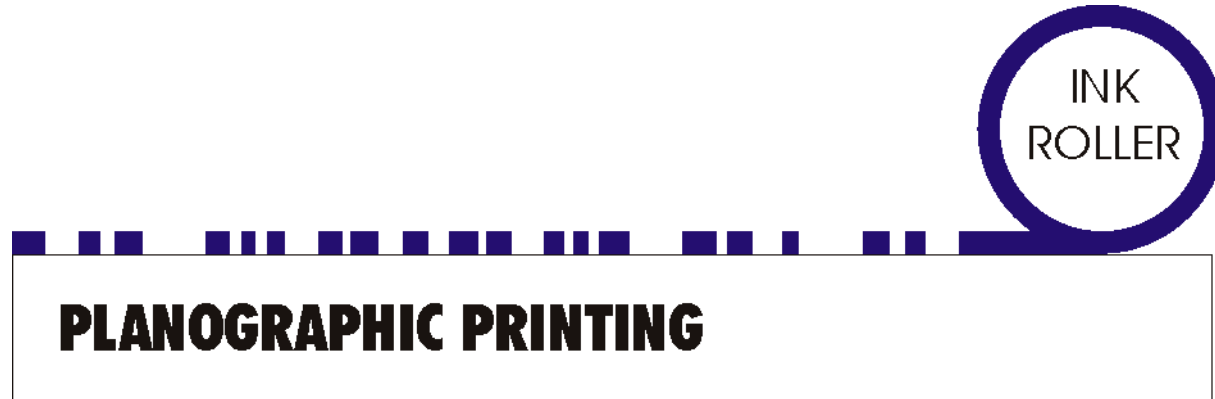
- Colour supplements

- Mail order catalogues

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## PLANOGRAPHIC

- lithography



### **PLANOGRAPHIC PRINTING**

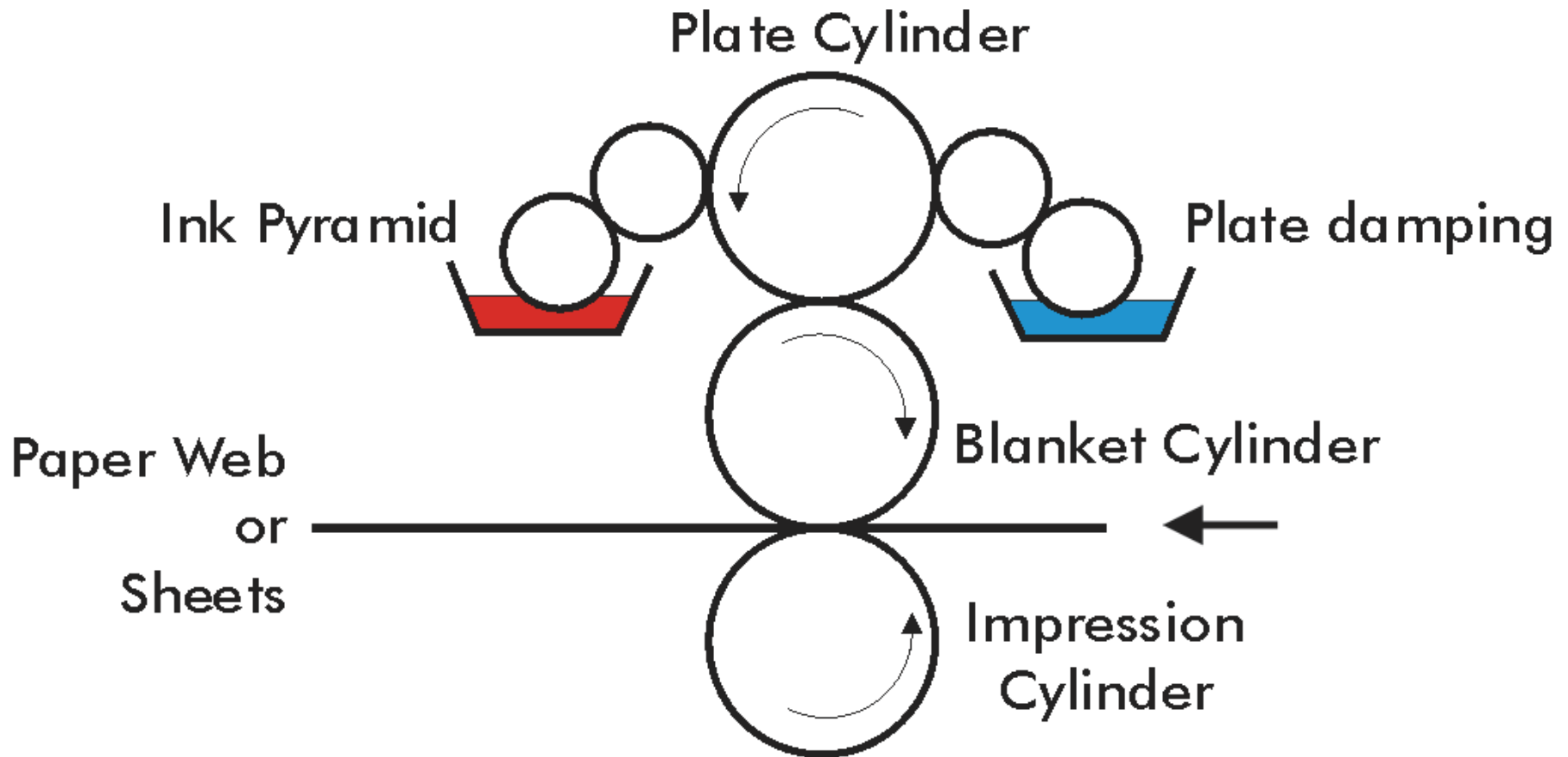
This process uses chemistry and the fact that oil and water don't mix to put ink onto the required parts of a flat plate.

The paper is then pressed against the plate picking up the ink.

The plate is can be made of metal or polymers.

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## LITHOGRAPHY



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A web fed or sheet fed offset lithographic press produces great output from photoset originals and it is cheap but is difficult to run well.

## ADVANTAGES

- Prints well on a wide range of paper.
- Cheap plates
- Prints fine detail.
- Flexible process
- Quick to set up.
- Cost effective

## DISADVANTAGES

- Colour variation
- Paper stretch due to dampening.
- Dense ink film difficult to do.
- Needs a lot of attention for consistency
- Sticky ink that needs drying

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Lithography is probably the most popular print process and is used to print:

- Leaflets

- Brochures

- Magazines

- Newspapers

- Just about all general printing

“If in doubt say ***Offset Lithography***”